

Claims:

- 1 1. A polishing pad for a chemical mechanical
2 polishing apparatus, comprising:
3 a polishing surface;
4 an aperture formed in the polishing surface, the
5 aperture including a first section with a first dimension
6 and a second section with a second, different dimension;
7 a substantially transparent plug having a first
8 portion positioned in the first section of the aperture and
9 a second portion positioned in the second section of the
10 aperture; and
11 means for securing the plug in the aperture.
- 1 2. The polishing pad of claim 1 wherein the plug
2 is made of a polyurethane material.
- 1 3. The polishing pad of claim 1 wherein the fixing
2 means includes an adhesive material.
- 1 4. The polishing pad of claim 3 wherein the
2 adhesive material is made of an elastomeric polyurethane
3 material.
- 1 5. The polishing pad of claim 1 wherein the first
2 portion of the plug has substantially the same dimension as
3 the first section of the aperture and the second portion of
4 the plug has substantially the same dimension as the second
5 section of the aperture.
- 1 6. The polishing pad of claim 5 wherein the first
2 portion of the plug includes a top surface which is coplanar
3 with the polishing surface.

1 7. The polishing pad of claim 6 wherein the
2 thickness of the second portion of the plug is less than the
3 depth of the second section of the aperture.

1 8. The polishing pad of claim 6 wherein the first
2 dimension is larger than the second dimension.

3 9. The polishing pad of claim 1 wherein the plug
4 includes a rim.

1 10. The polishing pad of claim 1 wherein the fixing
2 means includes an adhesive material located on the rim.

3 11. A polishing pad for a chemical mechanical
4 polishing apparatus, comprising:
5 a first layer having a polishing surface;
6 a second layer adjacent to the first layer;
7 an aperture through the first and second layers, the
8 aperture including a first opening in the first layer with a
9 first cross-sectional area and a second opening in the
10 second layer with a second, smaller cross-sectional area;
11 a substantially transparent plug positioned in the
12 aperture, the plug having a first portion positioned in the
13 first section of the aperture and a second portion
14 positioned in the second section of the aperture; and
15 an adhesive material fixing the plug in the
16 aperture.

1 12. The polishing pad of claim 11 wherein the first
2 layer has a first durometer measurement and the second layer
3 has a second, smaller durometer measurement.

1 13. A method of forming a polishing pad, comprising
2 the steps of:
3 forming an aperture in a polishing pad such that the
4 aperture includes a first section with a first dimension and
5 a second section with a second, different dimension;
6 placing a substantially transparent plug in the
7 aperture, with the plug having a first portion positioned in
8 the first section of the aperture and a second section
9 positioned in the second section of the aperture; and
10 securing the plug in the aperture.

1 14. The method of claim 13 wherein the securing
2 step includes fixing the plug in the aperture with an
3 adhesive.

1 15. The method of claim 13 wherein the step of
2 forming the aperture includes removing material from the
3 polishing pad.

4 16. The method of claim 15 wherein the removing
5 step includes removing the first section from a first layer
6 of the polishing pad and removing the second section from a
7 second layer of the polishing pad.